VEEDER-ROOT

VersaCount™

When Versatility Counts.

Value Selling Guide

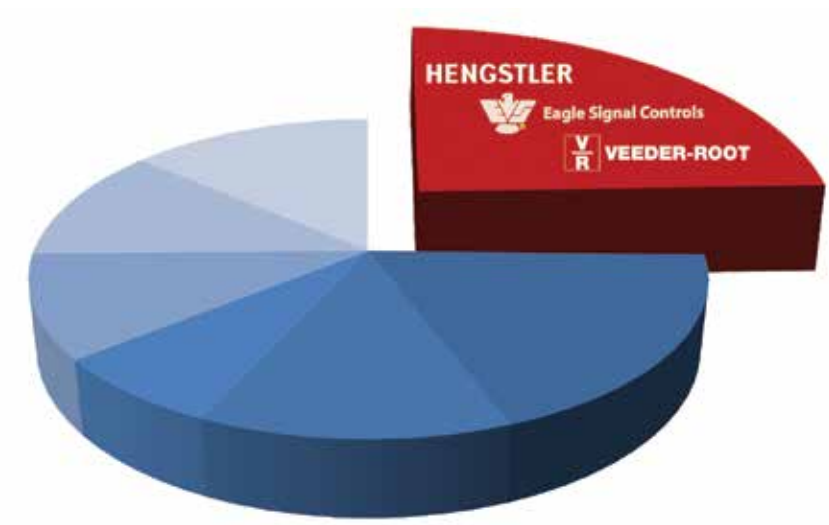
VEEDER-ROOT VALUE

VEEDER-ROOT

For over 120 years, Veeder-Root has supplied mechanical, electromechanical and electronic event timers and counters to satisfy a full range of application and control requirements. Recognized for innovative designs, quality, durability and accuracy, Veeder-Root brand products continue to be the first choice of design and manufacturing engineers.

Dedication to customer service is unparalleled in the industry with company wide commitment to responsiveness, reliability and attitude. It's no wonder that Danaher brands command almost a quarter of the global Timer and Counter market.

Responsiveness starts by meeting your delivery needs – shipping your product fast and accurately. But it goes beyond that, every Eagle Signal and Veeder-Root employee takes pride in servicing your requests for price, delivery, and technical and application support in a fast, accurate manner.



Reliability stems from providing products that are consistently designed, manufactured, and tested to the highest quality standards, and shipped when promised. Additionally, reliable service encompasses a knowledgeable staff of Engineers and Application support professionals to help solve any of your off the shelf or custom timing, counting and display needs.

We appreciate your business as reflected in our positive and professional attitude. A commitment to ISO-9001 practices assures our customers that we deliver world class products and customer service.

The Veeder-Root VersaCount 1/16 DIN size multifunction counter is the most **versatile** counter on the market today. Whatever your application, timing, counting, rate measuring, position indicating, volume measurement, speed controlling, length cutting or batch, shift, pulse or piece counting, – the VersaCount is the only device you need When Versatility Counts.

Timing
Counting
Rate Measurement
Position Indication
Speed Control
Length Cutting
Batch Counting
Shift Counting
Piece Counting
Volume Measurement

Versatility doesn't stop with functionality. The highest count frequency in the industry enables the VersaCount to perform in applications not previously possible with an electronic counter. What would speed be without accuracy? That's why the VersaCount features an unprecedented prescaler **accuracy to one ten thousandth**. Further, automation and precision control are achieved using **three presets** with signal times programmable up to **ten minutes**.

Veeder-Root is the first in the industry to offer a programming assistant where applications can easily be created, archived and printed using the proprietary Programming Assistant software. VersaCount XP models allow the user to easily **upload programs** via USB key or Ethernet connection.

Versatile All-in-one 1/16 DIN size multi-function device

Fast installation and replacement with plug in terminals

View two separate outputs at the same time with large 2-line, easy to read display

Simple to operate with four large buttons

Easy to program - draft, save and print application programs using the Programming Assistant on a PC. (VersaCount XP[1] models can be programmed via USB or Ethernet connection)

Highlights

- Fast input frequency up to 60 kHz allows for high speed counting and measuring applications
- Up to 3 Presets for precision control (1 as absolute or trail preset, range or limit value; 2 with relay output and signal)
- Signal times programmable up to 10 minutes for a variety of application requirements
- Prescaler adjustable from 0.0001 to 99.9999 for industry leading precision

[1]Available soon

APPLICATIONS

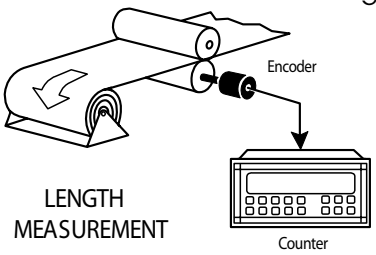
Range Signals

The range signal function generates an output when a count falls outside a predetermined high and low limit range.

For example, in parking garages this is a useful function to trigger a "parking full" sign. Vehicles are counted when entering or exiting the parking garage and, depending on whether a defined value is exceeded or fallen below, the counter sends a signal to the sign. This signal tells the sign whether to display "OPEN" or "FULL".

Length Measurements

Length measuring systems are used to measure lengths of paper, textile fabrics, or metals. The counter totalizes pulses sent by an encoder connected to a measuring wheel, or directly coupled to the drum on which the material is running.

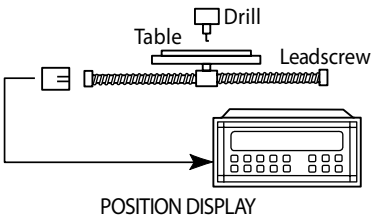


If the encoder is connected to a measuring wheel, this wheel will run on top of the material to be measured. If it is directly coupled to the rolling material, the counter will count the roller's rotations and convert the resulting value to a length value.

By programming a counter preset, the material length and cut-off position can be defined over or at a defined length. In this case, the counter sends a signal after reaching a preset value, such as a command to the cutter. This function not only allows defining the number and length of each batch, but also converting units (e.g. meters to inches).

Position Indicators

The position indicator function allows exact positioning of work pieces and tools on machining systems, e.g. sawing or milling machines and bending or edging machines. After placing the work piece or material in a starting position, an encoder located on the spindle or drum of the machine relays the movement data to the counter. Depending on the number of counter presets, a defined number of paths can be entered.



In many cases, two preset values are used: the 1st value signals the machine to slow down so as to avoid a sudden stop at full speed. The 2nd value indicates the end position. Trail presets are also used in this case because the "slow-down" path of the machine is independent of the total path. For example, you always want a tool to slow down within 2 cm before reaching its end position.

Except for cases where trail presets are used, limit values can be entered to protect the side stops, and positioning data can be relayed to control and guidance systems. Similarly, tolerance thresholds can be monitored after entering minimum and maximum values.

Multifunction Batch Counting

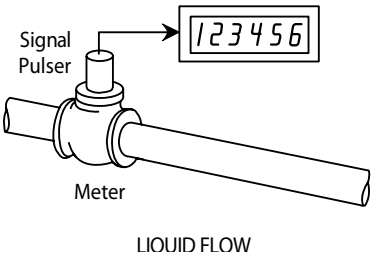
The latch/reset function allows counting parts per unit in the background mode with the indicator also indicating the previous unit value.

Shift Counting

The counter can be set to display the value of the previous shifts product, while also displaying the count of the current shift.

Volume Measurement

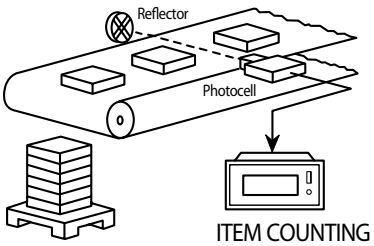
Traditionally, a flow meter measures the volume flowing through a tube or pipe and, after reaching a predefined value, sends a signal to the counter. The counter is capable of converting the received data into the flow rate – a method, which is particularly important if a high degree of accuracy is required.



If the flow rate is known to be constant, the VersaCount can perform this measurement without a flow meter. This function is useful in cases where, for example, measurements inside the pipe are not possible or precise measurements by means of a flow meter are not required. The flow rate per time unit has to be known in this case (e.g. liters per Second or gallons per minute). Using the prescaler, the flow rate can be determined using the counter's standard timer function: the counter multiplies the time units elapsed by the flow rate per time unit.

Piece Counting

Piece counting is necessary in applications like bottling operations, where pulses are usually transmitted from a beverage production, where pulses are usually transmitted sensor to the counter.



Four functions are available to select from:
Single-channel counting: as shown in our example on the left, this function sums the production count of bottling line.
Totalizing: A totalizer (summation) counter makes it possible to sum the count of two independent inputs.
Differential counting: this mode allows adding via one input and subtracting via a second input. For example, it allows subtracting defective and rejected bottles from the total production quantity. Single-channel counting with directional input enables exact measurements of production quantities even after changes in the direction of a production line.

PROGRAMING OVERVIEW

Overview of Standard Functions

E ▲ ▼ ▶

ENTER - KEY UP - KEY DOWN - KEY SHIFT - KEY

Programming

If pressed together with POWER ON
(keep keys pressed and switch on the device)

E + ▲ Selects standard functions

E + ▼ Sets function codes

E + ▶ Selects ID Data
(Article code (ID No.), manufacturing date, serial number,...)

▲ + ▶ Sets User Times

During Operation

▲ + ▼ Sets reset

E + ▶ Sets preset 0

E + ▼ Sets preset 1

E + ▲ Sets preset 2

▲ + ▶ Sets prescaler

Additional function for shift and batch counters

▶ Switches between total sum and partial sum and/or count value and totalizer or batch counter

Additional function for timers

▲ Timer Start
(if enabled with function code F-15)

▲ Timer Stop
(if enabled with function code F-15)

See user manual for additional details.

PROGRAMING ASSISTANT

Easy Programming at your Computer

The proprietary VersaCount Programming Assistant is a PC based software program designed to help draft, archive and configure the VersaCount and VersaCount XP. With its familiar and intuitive interface, the Programming Assistant contains a selection of sample programs for a wide range of applications.

Once the program is drafted, it can be saved and archived for duplicate applications, or as a backup should the VersaCount ever need to be replaced. In addition, the programmer does not have to be present to configure the device; rather a print-out can be used by someone on-site to enter the previously-configured operating parameters. On VersaCount XP models, users are able to upload the operating program directly to the counter via USB or Ethernet connection.

Highlights

- Easy to create and save programs.
- Print configurations for easy reference and input
- Load/program codes directly to the counter with USB or Ethernet Connection (VersaCount XP only)
- Programs can be developed off-line prior to installing and powering up the counter, reducing overall lead time for new applications

electronic production

processing

packaging

VERSACOUNT SPECIFICATIONS

GENERAL	Display	LCD reflective, 2 lines, counter value/presettings 6-digits; decimal point (up to 4 decimals)
	Digit height	1st line 9.3 mm (0.37") ; 2nd line 7.2 mm (0.28")
	Supply voltage	SELV: 12-30 VDC; protected against polarity reversal 24 VAC, 50/60 Hz, ± 10% / 115 VAC, 230 VAC, 50/60 Hz, ± 10%
	Sensor supply	Only for AC operation: 12-24 VDC load-dependent; max. 50 mA
	Storage of values	Non Volatile memory > 10 years
	Electrical connections	Plug-in screw-type connections / terminals
	Cable cross-section	1 - 1.5 mm² with wire-end sleeves
	Amplitude threshold	< 2 V and > 8 V or < 1 V and > 4 V at TTL-level amplitude max. 40 VDC
	Active edge	Programmable, positive for PNP-input, negative for NPN-input
	Pulse form	Any desired form (at max. frequency square 1:1)
	Count frequency	Up to 60 kHz
	Input resistance	Approx. 10 kohm
	Pulse duration min.	17 ms (30 Hz); 8 µs (60 kHz)
	Prescaler	0.0001 - 99.9999
	Reset	Manual reset via keyboard, external reset via static or dynamic programming, automatic reset after reaching Preset 2, via application input (programmable) and programmable Power-On Reset
	Set function	Setting to Preset 0 (independent of reset)
	Display and preset range	-999,999 to +999, 999
	Alarm signal	Display flashes when preset 0, 1 or 2 are active
	Signal times	0.01 seconds to 599.99 seconds or bistable programable
	Relay (Preset 1 and 2)	Change-over contact max.: 250 VAC / 30 VDC / 5 A
	Transistor (preset 1 + 2)	PNP-output 12 - 30 VDC, max. 50 mA for DC supply 12 - 24 VDC, max. 30 mA for AC supply
	Application output	PNP-output 12 - 30 VDC max. 20 mA for DC supply 12 - 24 VDC max. 20 mA for AC supply
COUNTER	Counter mode Input A,B	Unidirectional; adding or subtracting; directional input; Differential operation; add / sub; summation (totalizing) add / add; Phase discriminator single, double or quadruple evaluation
	Control input	Reset; Gate/Inhibit
	Preset modes	Absolute or trail, Range signal / limit values (signal1 < Preset1, signal2 > Preset 2)
	Application input/output	output: Prescaler out, Preset 0-out, Direction-out Input: Counter input add / sub, Keylock, Hold, Teach in, Reset, Set, Gate/Inhibit
DIMENSIONS		48 mm (1.89") x 48 mm (1.89") x 118 mm (4.65"), installation depth 110 mm (4.33"); DIN 43700

rolling shutter gate

elevators

conveyor belts

BATCH COUNTER	Mode	Batch counter with preset or 2nd totalizer with preset
SHIFT-COUNTER	Counter mode of operation	Differential counting add/sub, totalizing add/add
TACHOMETER	Measuring principle	Period (cycle) measurement (1/Tau)
	Time base	1/min or 1/s
	Min. frequency	1 Hz or 0.1 Hz
	Limit values	2 alarms with programmable startup suppression + 1 additional upper limit value on the application output
	Tachometer mode of operation	Unidirectional add oder sub; directional input Differential add / sub; totalizing add / add; Phase discriminator single, double or quadruple evaluation A / B or (A-B) / A %
	Application input / output	Output: Preset 0-out, Direction-out Input: additional counter input add / sub, Keylock, Hold, Teach in
	Overall tolerance	= Shown resolution + tolerance of timebase = 130 ppm
TIME COUNTER	Time base	Programmable in sec, min, h or hh:mm:ss
	Resolution	1; 0.1; 0.01; 0.001; 0.0001
	Function	Single-pulse or cumulative measurement
	Measuring principle	Pulse-width or cycle duration measurement Start Input A + Stop Input B; Start / Stop key
	Application input/output	Output: Preset 0-out Input: additional Run, Stop, Reset, Set, Keylock, Hold, Teach in
	Overall tolerance	= Shown resolution + tolerance of timebase = 130 ppm
TOLERANCE & CERTIFICATIONS	General design	EN 61 010-1 / IEC 61010-1
	Protection class	II; EN 61010-1 / IEC 61010-1
	Pollution degree	V 2, EN 50178
	EMC-immunity	EN 61326-1 industrial environment **
	EMC-emission	EN 61326-1 Class B **
	Ambient temperature	0° to 50°C (32° to 122°F) EN 60 068-2-1/2
	Storage temperature	-20° to +65°C (-4° to 149°F) EN 60 068-2-1/2
	Climate	40°C (104°F) / 93% rel hum. class 4K4H, EN 60 068-2-78 25 to 50°C (77° to 122°F) / 93% rel hum., cyclic, EN 60 068-2-38
	Protection class	IP 65 front side; EN 60529 / IP 20 terminals
	Vibration resistence	10 m/s² (32.8 ft/s²) (10 to 150 Hz); EN 60 068-2-6
	Shock resistence	100 m/s² (328 ft/s²) (18 ms); EN 60 068-2-27
	Chemical resistance	Front foil acc. to DIN 42 115-2
	Approvals	UL, CSA (pending), CE
	RoHS	Compliant
SPECIFICATIONS	Installation	Front panel installation with tenter (frame), front panel thickness max. 11 mm (0.433")
	Front panel cut out	45 mm (1.77") x 45 mm (1.77") + 0.3 mm (0.012")

** For cable length > 30 m (98 ft), for connection to a DC-supply-network and input level TTL an additional protection circuit is necessary.

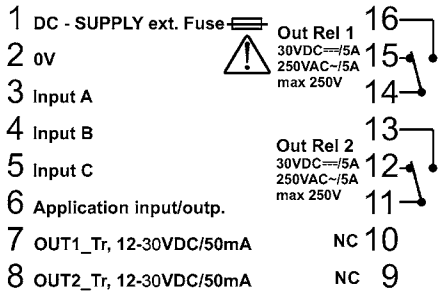
packaging

beverage

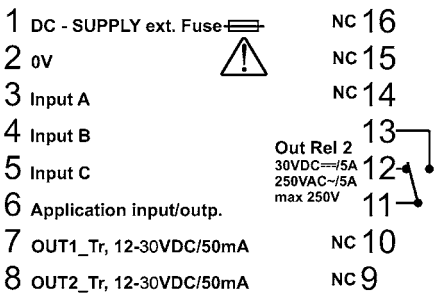
chemical

CONNECTION DIAGRAMS

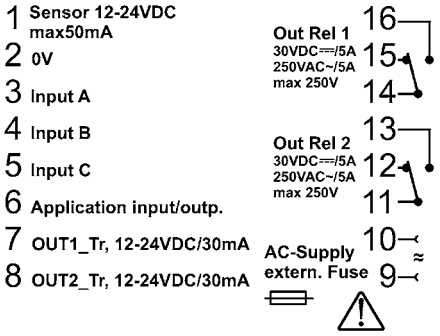
VDC 2 Relay / 2 Transistors



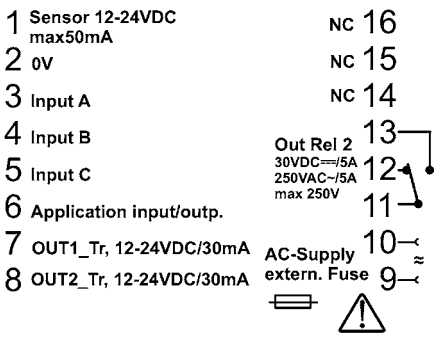
VDC 1 Relay / 2 Transistors



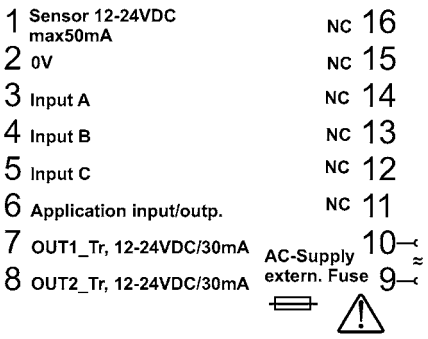
VAC 2 Relay / 2 Transistors



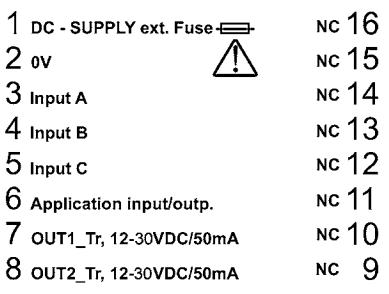
VAC 1 Relay / 2 Transistors



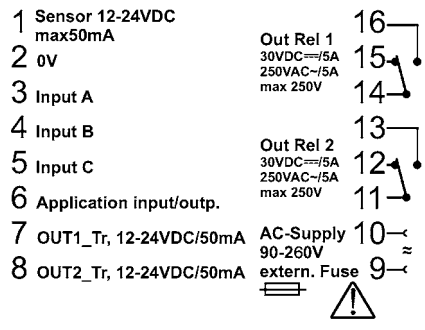
VAC 2 Transistors



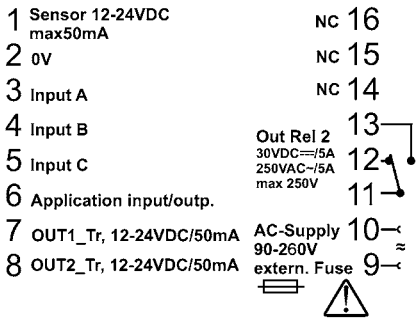
VDC 2 Transistors



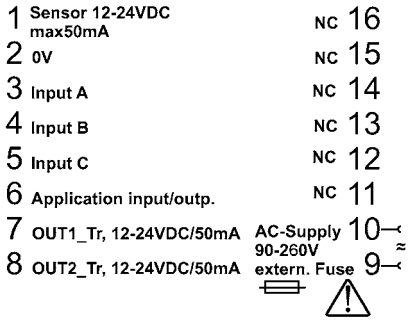
VAC Switching Power Supply 2 Relays / 2 Transistors



VAC Switching Power Supply 1 Relay / 2 Transistors



VAC Switching Power Supply 2 Transistors



petrochemical

printing

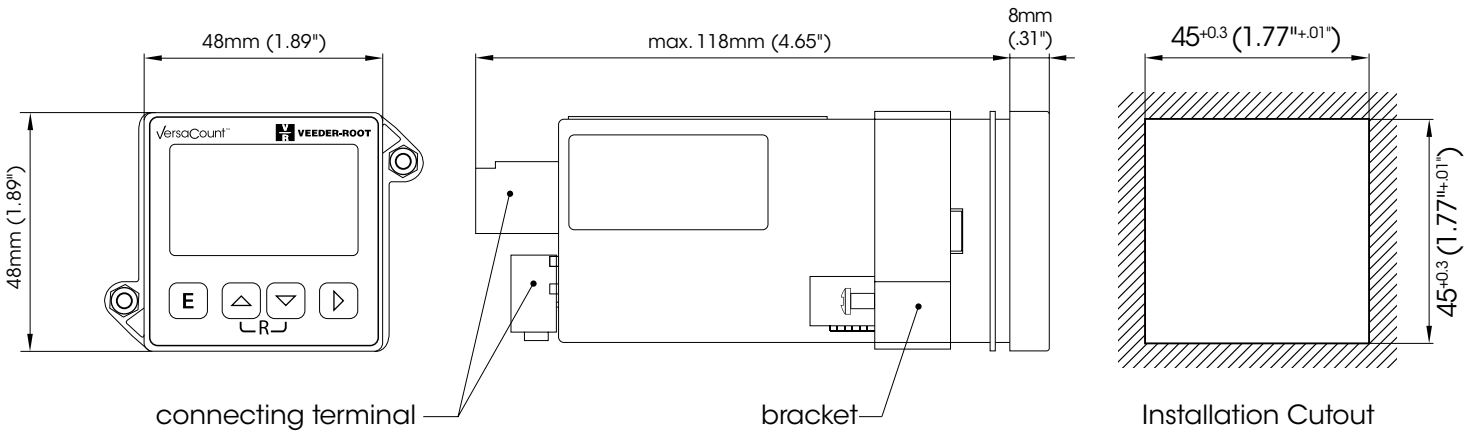
textile

THE VERSACOUNT

VersaCount™

- Large 2 line display
- Counting Speeds up to 60kHz
- Prescaler range and accuracy of 0.001 to 99.9999
- Plug-in screw-type terminals
- Signals times up to 10 minutes

Dimensions



pharmaceuticals

food packaging

parking

ELECTRONIC COUNTER PROGRAM AT A GLANCE

VEEDER-ROOT

VersaCount™

C346 - The Classic
Multifunction Preset Counter

C342
Ulta Compact Totalizer

AWESOME C628
Totalizer

NEW MAX
Count Advanced

VR545
Pre-determining Counter

SQUIRE
Preset Counter

VRA103
Big Figures & Small
Installation Depth

VR799 MicroMite
Applicable for onboard
Mounting

food processing

printing

textile

COMPETITIVE COMPARISON

	VersaCount™	Red Lion C48C*	Redington 83*	Trumeter 7911*	Trumeter 7922*
Pulse counter	Y	Y	Y	Y	Y
Preset counter	Y	Y	Y	Y	Y
Timer	Y	-	-	-	-
Tachometer	Y	-	-	-	-
Dimensions (WxHxD) mm	48 x 48 x 18	49.5 x 49.5 x 105.9	49.5 x 49.5 x 106	48 x 48 x 83	48 x 48 x 83
Front panel cut out	45 x 45	45 x 45	45 x 45	45 x 45	45 x 45
Display	LCD 6 digit 9.3 mm / 2.line 7.2 mm	LCD 6 digit 7.6 mm red normal value 6-digit 5 mm green	LCD 6 digit 7.6 mm 5 mm two colors	LCD 6 digit counter 8.5 mm preset 4.5 mm	LCD 6 digit counter 7mm preset 4 mm
Protection case	IP 65	IP65	IP65	IP65	IP65
Power supply	12 - 30 VDC / 24 VAC / 115 VAC / 230 VAC	8 - 36 VDC / 24 VAC / 85 - 250 VAC	12 - 36 VDC / 24 VAC / 85 - 250 VAC	2 lithium-batteries 3 V 8 years	10 -26 VDC / 85 - 250 VAC
Input control	PNP / NPN 12V - HTL (8-40V) or TTL 3.5 - 5 V	PNP / NPN 7.5 - 30 V oder TTL 3.75 - 30 V	PNP / NPN 7.5 - 30 V / 5.5 - 30 V	opt. isolated count + reset 12 - 240 VAC	PNP / NPN opt. isolatrd 10 - 30 VDC
Frequency	60 kHz / 30 Hz	12 kHz / 50 Hz	depending on Prescaler ca. 2 - 2 kHz / 50 Hz	25 Hz	10kHz / 30 Hz
Prescaler	0.0001 - 99.9999	0.00001 - 9.99999	0.00001 - 9.99999	-	0.00001 - 9.99999 divisor 1 - 99999
Count/control Input	3 inputs (1 or 2 count, gate, reset + application	2 counter input / 2 user input		1 counter / reset / keylock	2 counter / reset / keylock
Adding mode	Y	Y	Y	add or sub Modus	Y
Differential mode	Y	Y	Y	-	-
Count direction Input	Y	Y	Y	-	Y
Add/Add Mode	Y	Y	Y	-	Y
Phase discriminator	programmable single, double, quadruple evaluation	programmable single, double, quadruple evaluation	programmable single, double, quadruple evaluation	-	Y
Output/preset	without, with 1 or 2 relay + transistor output, 3. preset-application-output (only transistor)	2 relays 2 transistors or 3 relays 1 transistor (baatchmode)	1 realy 1 transistor 2 relays 2 transistors	1 relay	2 relays
Signal length	bistabil, or 0.01 - 599.99 s	programmable 0.01 - 99.99s / 0.1 - 999.9s		programmable 0.1 0 9.9s	Latching or Timed
Relay	change-over contact 5A / 230 VAC	normally open 250 VAC, 5 A		1 realy progr. As NO or NC 8 A	P1 change-over P2 as NO or NC progr. 8 A
Trial preset	Y	-		-	-
Range signal counter	Y	-		-	-
Range signal tachometer	Y	-		-	-
Range signal timer	Y	-		-	-
Negative preset	Y			-	-
Batch preset	Y	Y		-	Y
Start Button	Y	-		-	-
Prescaler output	Y	Model C48CP	Y	-	-
Connectors	convenient screw-type terminals/ plug-type connectors	screw clamps			

* Brands are Respective Trademarks of their owners.

FREQUENTLY ASKED QUESTIONS

What are the key features of the new VersaCount?
- Most versatile multifunction counter available in the market offering a wide range of application possibilities.
- Trail Preset function – saving repeated programming of the previous signal.
- Large, two-line display showing the value of the totalizing counter or active preset value in addition to the current counter reading.
- Easy and logical operation via 4 large accessible keys.

What are the standard functions of the VersaCount?
The VersaCount can be operated in five standard modes; pulse counter, tachometer, timer, shift counter and batch counter.

How large is the VersaCount display?
Measuring 48 x 48mm (1.89" x 1.89"), VersaCount boasts the largest display in its class. The first line features 6 digits and measures 9.3 mm (0.37") while the second line has 6 digits and measures 7.2 mm (0.28").

Has the input frequency changed as compared to the C346?
Yes, it has. The input frequency of VersaCount is now 60 kHz, 12 times higher than that of the C346.

How easy is it to install and configure the VersaCount?
With features like convenient plug in screw-type terminals and the programming assistant software make installation and configuration easy.

How long can I adjust the signal time on the VersaCount?
There are nine pre-programmed signal times and three user defined signal times. Signal times can be programmed from 0.02 seconds up to 10 minutes. Processes can now be controlled directly from the counter rather than a PLC.

How does the new Signal Range function affect the counter's standard function?
This new function makes it possible to perform control and indicator functions, e.g. in parking garages.

How many preset values are available?
Up to three preset values can be programmed: P0, P1 and P2.

Can I enter a negative preset value?
Yes – the VersaCount is not only capable of negative counting, but also accepts a negative preset value.

May ≤ and ≥ also be used for range signals?
No, this is not possible. Limit values may only be indicated as < or >. For example, if you wish a signal to be sent at ≤ 50, you have to enter a preset value of 51 to obtain the desired result.

What type of safety and lockout functions are available?
Keys can be locked completely, released after being pressed for 10 seconds (in order to prevent accidental shifting) or locked by means of a keylock pulse at the application input (to lock the counter during machine operation).

Can certain preset values be highlighted visually when they have been reached?
Yes, VersaCount features a FLASH function, which causes the display to flash when a certain preset value is reached.

Which functions can be used via the application input?
A total of twelve (12) functions may be selected for the application input / output. These are the Prescaler Output, Output Preset 0, Counter Direction Output, Counter Input – Adding, Counter Input – Subtracting, Reset Input, Gate/Inhibit Input, Keylock Input, Display Memory Input, Teach Input, Latch / Reset, and Set Input (2nd option to set to VW 0).

Can I use several functions via the application input / output?
No, you can only use one function at a time via the application input / output.

What are the signals provided by the preset values?
Preset 1 and Preset 2 are available both as relay contacts and electronic output signals (PNP). Preset 0 is only available as an electronic output signal across the application output (PNP).

Is there a fourth decimal for the prescaler?
Yes, the prescaler can be set to four significant digits to increase accuracy and reduce rounding errors.

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